

AMENDMENTS TO THE CLAIMS

A complete listing of all claims and their current status is presented below. In the changes made to the following claims, ~~[[deletions are double bracketed]]~~ or ~~shown with strike-through~~, and additions are underlined.

1. **(Currently Amended)** A medical device for insertion into a bodily vessel to treat an intracranial aneurysm, the device comprising:

a mechanically expandable device, expandable from a first position to a second position; ~~said mechanically expandable device is expanded radially outwardly to the second position such that, in the second position, the an exterior surface of said the~~ mechanically expandable device engages with ~~the an~~ inner surface of the vessel so as to maintain a fluid pathway through ~~said the~~ vessel; and

a porous membrane, expandable ~~from a first position to a second position~~ in response to expansion of ~~said the~~ mechanically expandable device~~[[,]]~~; said

wherein at least a portion of the membrane is secured to the mechanically expandable device, such that a proximal end of the membrane is proximate to a proximal end of the mechanically expandable device, and a distal end of the membrane is proximate to a distal end of the mechanically expandable device; and

~~membrane being positioned proximal to the aneurysm and obstructing blood circulation to the aneurysm when expanded to the second position, and~~

~~wherein at least a portion of the membrane is secured to the mechanically expandable device to maintain the position of the membrane relative to the mechanically expandable device when expanded to the second position;~~

wherein the membrane is permeable and porous, the size of the pores of the membrane and the membrane has a substantially uniform porosity over a length extending from the distal end of the membrane to the proximal end of the membrane; and ratio of the material surface area

wherein, when of the mechanically expandable device is expanded in the bodily vessel, adjacent to the aneurysm, the membrane is effective to:

(i) obstruct blood flow from the vessel into the aneurysm; and

(ii) permit blood flow through pores in the membrane and into branch vessels arising from the bodily vessel. ~~that blood supply to perforators and/or microscopic branches of main brain is permitted perforators and/or microscopic branches to improve healing of the bodily vessel but blood supply to the aneurysm is prevented.~~

2. (Currently Amended) The medical device of claim 1, wherein the a distance between adjacent pores is from about 40 to 100 microns.

3. (Currently Amended) The medical device of claim 1, wherein the membrane is made of a biocompatible and elastomeric polymer.

4. (Currently Amended) The medical device of claim 1, wherein the membrane has a thickness of about 0.0005 to 0.005".

5. (Currently Amended) The medical device of claim 1, wherein the a ratio of the a material surface area of the membrane is from about 25 to 75%.

6. (Currently Amended) The medical device of claim 1, wherein the membrane has pores between 20 to 100 microns in size.

7. (Currently Amended) The medical device of claim 1, wherein the membrane is made from a polymeric material or a biodegradable material.

8. (Currently Amended) The medical device of claim 7, wherein the polymeric material or the biodegradable material forms multiple sub-layers mixed with drugs or reagents.

9. (Currently Amended) The medical device of claim 1, wherein the membrane is capable of isotropic expansion.

10. (Currently Amended) The medical device of claim 1, wherein the membrane is disposed on the an exterior surface of the device.

11. (Currently Amended) The medical device of claim 1, wherein the membrane completely surrounds the mechanically expandable device.

12. (Currently Amended) The medical device of claim 1, wherein the membrane circumferentially surrounds a portion of the mechanically expandable device.

13. (Currently Amended) The medical device of claim 1, wherein the membrane covers a portion of the mechanically expandable device.

14. (Canceled)

15. (Currently Amended) The medical device of claim 1 ~~claim 14~~, wherein the membrane is made from a solid polymer.

16. (Currently Amended) The medical device of claim 1, wherein the membrane has fabricated pores between about 20 to 100 microns in size.

17. (Currently Amended) The medical device of claim 16, wherein the pores are fabricated by laser drilling.

18. (Currently Amended) The medical device of claim 16, wherein ~~the~~ a distance between the pores is less than 100 $\mu$ m.

19. (Currently Amended) The medical device of claim 1, wherein the membrane comprises a plurality of polymeric strips secured to the mechanically expandable device,

20. (Currently Amended) The medical device of claim 19, wherein the strips are less than 0.075 mm and ~~the~~ a distance between adjacent strips is less than 100 $\mu$ m.

21. **(Currently Amended)** The medical device of claim 1, wherein the membrane comprises a mesh secured to the mechanically expandable device.

22. **(Currently Amended)** The medical device of claim 21, wherein ~~spaces~~ a spacing of the mesh is less than 100  $\mu\text{m}$  and ~~the~~ a width of the meshing is between 0.025 to 0.050 mm.

23. **(Canceled)**

24. **(Currently Amended)** The medical device of claim 1, wherein the mechanically expandable device comprises a generally tubular structure having an exterior surface defined by a plurality of interconnected struts having interstitial spaces therebetween.

25. **(Currently Amended)** The medical device of claim 1, wherein the mechanically expandable device is self-expandable or balloon expandable.

26. **(Currently Amended)** The medical device of claim 1, wherein the mechanically expandable device is comprises a stent.

27. **(Currently Amended)** The medical device of claim 24, wherein the membrane is supported by the generally tubular structure and is attached to at least one strut.

28. **(Currently Amended)** The medical device of claim 26, wherein the membrane is tubular having ~~a diameter similar to a nominal initial diameter of the stent~~; and wherein the membrane is disposed onto the outer surface of the stent or introduced by dip coating or spraying between the struts of the stent.

29. **(Currently Amended)** The medical device of claim 26, wherein the membrane is a segment of a tubular structure disposed onto a portion of the ~~the~~ an outer surface of the stent.

30. **(Currently Amended)** The medical device of claim 8, wherein the at least one drug

or reagent is in any-one a form selected from the group consisting of[[.]] a solid tablet, a liquid, and a powder.

31. **(Currently Amended)** The medical device of claim 1, wherein at least one radiopaque marker is provided on the mechanically expandable device ~~to improve visibility of the device during and after insertion.~~

32. **(Currently Amended)** The medical device of claim 31, wherein the at least one radiopaque marker ~~is made from~~ comprises gold or platinum.

33. **(Currently Amended)** The medical device of claim 31, wherein center radiopaque markers and end radiopaque markers are provided on the mechanically expandable device.

34. **(Currently Amended)** A medical device for treating a bifurcation or trifurcation intracranial aneurysm between at least two bodily vessels, the device comprising:

a first mechanically expandable device, expandable from a first position to a second position such that, in the second position, an exterior surface of the first mechanically expandable device engages with an inner surface of a first branch vessel arising from a parent vessel so as to maintain a fluid pathway through the first branch vessel; ~~for inserting into a first vessel;~~

a second mechanically expandable device, expandable from a first position to a second position such that, in the second position, an exterior surface of the second mechanically expandable device engages with an inner surface of a second branch vessel arising from the parent vessel so as to maintain a fluid pathway through the second branch vessel; ~~and for inserting into a second vessel;~~

~~each mechanically expandable device expandable from a first position to a second position, said mechanically expandable device is expanded radially outwardly to the second position such that the exterior surface of said mechanically expandable device engages with the inner surface of the vessel so as to maintain a fluid pathway through said vessel; and~~

a porous membrane, ~~expandable from a first position to a second position in response to expansion of said mechanically expandable devices, said membrane being positioned proximal to~~

~~the aneurysm and obstructing blood circulation to the aneurysm when expanded to the second position, and at least a portion of a proximate end of the membrane is secured to the first mechanically expandable device and a distal end of the membrane is secured to the second mechanically expandable device; each mechanically expandable device, to maintain the position of the membrane relative to the mechanically expandable devices when expanded to the second position;~~

~~wherein the membrane is permeable and porous, the size of the pores of the membrane and the membrane has a substantially uniform porosity over a length extending from a distal end of the membrane to a proximal end of the membrane; and ratio of the material surface area of the membrane;~~

~~wherein, when the first mechanically expandable device is expanded in the first branch vessel adjacent to the aneurysm and the second mechanically expandable device is expanded in the second branch vessel adjacent to the aneurysm, the membrane is effective to:~~

- ~~(i) at least partially obstruct blood flow into the aneurysm; and~~
- ~~(ii) permit blood flow through pores in the membrane and into that blood supply to perforators and/or microscopic branches of main brain arteries, arterioles permitted perforators and/or microscopic branches to improve healing of the bodily vessel but blood supply to the aneurysm is prevented.~~

35. (Currently Amended) A method of making a the medical device ~~according to of~~ claim 1, the method comprising:

disposing the mechanically expandable device ~~generally~~ tubular structure on a mandrel;  
and

disposing the membrane onto ~~the an~~ outer surface of the mechanically expandable device.

36. (Currently Amended) A method of making a the medical device ~~according to of~~ claim 24, the method comprising:

disposing the mechanically expandable device ~~generally~~ tubular structure on a mandrel;  
and

incorporating the membrane between the struts of the mechanically expandable device.  
stent.

37. – 38. (Canceled)

39. (New) The method of claim 34, wherein the membrane expands in response to expansion of the first mechanically expandable device.

40. (New) The method of claim 34, wherein the membrane expands in response to expansion of the first and second mechanically expandable devices.